Title a method for refining edible oil

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Abstract

This invention provides a kind of processing technology for refining squeezed peanut, rapeseed and beans raw oil into edible oil. It is characterized in that adding water into the raw oil, stirring, to combine phospholipid in raw oil with water to precipitate, separating from the oil

to obtain refined edible oil. In the course of refining, strictly controlling the amount of water, oil temperature, water temperature and mixing machine rotation speed. Compared with alkali refining method, the refining method increase oil yield 7-17%, cost falls 7.6-19%.

What is claimed is:

1. a method for refining edible oil by removing phospholipid in raw oil in edible oil processing, which is characterized in that adding water into the raw oil and stirring, phospholipids is combined with water, and formed into floccule and precipitating and separating.

2. according to claim 1 the said method, which is characterized in that the amount of water is weight of raw oil 0.5-3%, mode of incorporating water is to slowly, uniformly spray on the oil surface, the time of adding water is five to 15 minutes.

3. according to claim 1 or 2 said method, which is characterized in that incorporated oil temperature is 38-45 ℃ when adding water, incorporated water temperature is 33-40 ℃.

4. according to claim 1 or 2 said method, which is characterized in that incorporated oil temperature is 20-25 ℃ when adding water, incorporated water temperature is 15-20 ℃.

5. according to claim 1 or 2 said method, which is characterized in that prior to or after incorporated water, stirring speed is per minute 60 to 70

rotation, when water is incorporated, the stirring speed is per minute 30-40 rotation.

6. claim 3 said method, which is characterized in that prior to or after incorporated water, stirring speed is per minute 60 to 70 rotation, when water is incorporated, the stirring speed is per minute 30-40 rotation.

7. according to claim 4 said method, which is characterized in that prior to or after incorporated water, stirring speed is per minute 60-70 rotation, when water is incorporated, the stirring speed is per minute 30 to 40 rotation.

Description

A method for refining edible oil

The invention relates to a kind of vegetable oil process technology, specifically peanut oil, rapeseed oil, soybean oil and other edible oil refining technique.

In fat and oil is added industrial and commercial bank of China industry, raw oil means crude oil containing phospholipid and other impurity squeezed by oil press. At present generally adopt precipitate press filtering or alkali refining method to refine the raw oil into edible oil.

Usually adopted alkali refining method process flow is: heating the cooled raw oil to 50-60 ℃, incorporated into 18 degrees caustic soda solution, caustic soda and liquid usage amount is weight of raw oil 8 to

10 percent, at the same time, stirring well at the speed of 50 to 60 rotation per minute, then quiescent settling 10 hours or more, separating out oil slag, to obtain refined oil. The alkali refining oil method, there is a need to use caustic soda (caustic potash), the higher cost, essential oil which were obtained yield rate is low, oiliness worse.

The purpose of the invention is to provide a method for refining high-quality edible oil without adding any chemistry, also no consumption of heat energy.

The invention is realized in the way: because the phospholipid has hydrophilic property, after absorbing water volume expands, specific gravity increases, make phospholipid transfer from oil phase into the water phase, then it can be precipitated and separated from raw oil. Doping the appropriate amount of water into raw oil, at the same time reasonably controlling oil temperature, water temperature and stirring speed. To combine phospholipid with water, transfer from oil phase into the water phase, and formed into floccule gradually precipitate, separating from the oil, to obtain refined oil.

The inventive process flow is as follows: sieving hot crude oil squeezed by oil press with 140 mesh sieve ring, while feeding into fining pot, stirring with per minute 60-70 rotation mixing machine. Stirring time is not less than 10 minutes. In order to shorten the cooling time, cooling it with circulating water. When oil temperature falls to 38-45 ℃, mixing

machine rotation speed change into per minute 30-40 rotation. At the same time, spraying the 33-40 ℃ warm water slowly and uniformly on the oil surface, doped into the oil, the amount of water is the weight of raw oil 0.5-3%, doped time of water is controlled at five to 15 minutes. After incorporating water, mixing machine rotation speed changes into per minute 60-70 turning, stirring was continued for 15 to 30 minutes, until floccule precipitation generates, immediately stopping stirring, standing precipitate 10 hours or more, that can separate out sedimentary oil slag, sending essential oil into oil storage tank or barrelling.

The above is warm process refining, there is also provided with a cold process refining. Namely the water is incorporated, raw oil temperature drops to 20-25 ℃, incorporated water temperature is 15-20 ℃. The rest process requirement is the same as warm method totally. The above 2 processes are selected for use depending on climate and conditions.

This edible oil refining method has the advantages that: firstly capable of remarkably increase oil yield, quality of refined oil is high. Refined peanut oil, rapeseed oil and soybean oil, oil yield is over 95%, compared with-furnishes the alkali refining method increase 7-17%. Refined oil through Shanghai City grain and oil test center test, acid value is 1.12mgKOH/g oil; water content is 0.196%; walsh substance is 0.02%; flavacin B1; arsenides, mercuride are not detected. Quality is superior to the national second-stage oil standard. Heating oil to 280 ℃, oil color is

unchanged, no precipitation, in compliance with sanitary standard two, there is no addition of any chemistry, not heat consumption, low investment, low cost, by this method can refine rapeseed oil. Peanut oil and soybean oil, the cost is relatively alkali refining method respectively decrease 230 Yuan, 460 Yuan and 560 Yuan. Decrease rate is 7.6-19%.

The following is an example adopting warm method refining. Behind oil press of oil and fat plant is provided with refining pot with a volume of one ton, therein is provided with cooling water pipe and mixing machine, sieving hot peanut oil raw oil squeezed by oil press with 140 mesh screen, after guiding into fining pot, starting mixing machine, stirring at the speed of per minute 70 roration, at the same time of water cooling. Stirring time should be not less than 10 minutes. When the oil is cooled to 40 ℃, turn off the cooling water pipe, mixing machine rotation speed changes into 36 rotation. At the same time, spraying the 85 ℃ warm water 16 kg slowly and uniformly on the oil surface, doped into the oil, doped time of water is about 10 minutes. After finishing doping water, mixing machine rotation speed changes into per minute 70 rotation, continuously stirring, and observing oil surface. After approximately 10 minutes, generates fine floccule and slow sinking, immediately turn off mixing machine. Standing precipitate 12 hr, from the tank bottom dropping precipitating dregs, to obtain the final product to refining peanut oil 950 kg, by testing, quality is superior to the national second-stage

peanut oil standard.